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WATTS 1-800-331-5967

December 20, 1991

Agency of Natural Resources  
Department of Environmental Conservation  
Hazardous Materials Division  
103 South Main Street  
Waterbury, Vermont 05671-0404

Attn: Linda Guere  
Site Manager  
Sites Management Section

Re: Waste Management, T.10, Ch.159, Sec. 6617

Dear Linda Guere,

This letter is to inform you on behalf of my client, the U.S. Small Business Administration (SBA), that Con-Test Inc. has documented a suspected release of hazardous materials at the property known as Northland Sports, located at 117 Troy Street in Richford, Vermont.

Specific information regarding this suspected release is contained in the enclosed report titled, Phase II Environmental Site Assessment conducted at 117 Troy Street, Richford, Vermont for U.S. Small business Administration by Con-Test Inc., dated September 23, 1991. In addition to this report, a Con-Test Inc. proposal (#4771 - scope of services), which is now before the SBA, is enclosed so that the state may review the course of action being considered by Con-Test Inc. and our client to remedy some of the concerns addressed in the enclosed site assessment. Con-Test Inc. and the SBA would welcome any input the state has to offer before tentatively proceeding with the proposal sometime early in 1992 (January).

Thank you for your time and consideration, and please feel free to circulate this information with any other pertinent State of Vermont regulatory personnel.

Sincerely,

Con-Test Inc.  
Gary R. Urlich  
Project Manager

encls  
cc: SBA/VT/MM

Phase II  
Environmental  
Assessment  
9-23-91

## QUALITY ASSURANCE REVIEW

This report has been reviewed to ensure that it meets or exceeds Con-Test, Inc. professional standards. All Con-Test reports are reviewed for quality, content, and clarity. Analytical data support the conclusions and recommendations made within this report.

Report prepared  
by  
Title

Gary R. Urich  
Environmental Hygienist

Reviewed by  
Title

Michael C. Mackiewicz  
Technical Manager  
Hydrogeology

Date

October 14, 1991



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PHASE II  
ENVIRONMENTAL SITE ASSESSMENT

CONDUCTED AT

117 TROY STREET

RICHFORD, VERMONT

FOR

U.S. SMALL BUSINESS ADMINISTRATION

BY

CON-TEST, INC.

PREPARED BY

Gary R. Urich  
Environmental Hygienist

DATE: September 23, 1991

## PREFACE

The following is a report of an investigation undertaken by Con-Test, Inc. on behalf of the U.S. Small Business Administration for the purpose of rendering an opinion on the environmental condition of the property at 117 Troy Street in Richford, Vermont. The investigation resulted in an assessment of the physical characteristics of the subject site with regard to the presence of hazardous material or oil.

The findings enclosed in this site assessment report are strictly limited to the time and scope of the evaluation. The investigation was conducted in accordance with generally accepted hydrogeologic practices. A total of four widely spaced subsurface borings were made to investigate to a reasonable extent the existing subsurface conditions.

These conditions are subject to variations and changes in location and time. This report does include chemical screening for a practical number of specific parameters and it should be noted that chemical constituents not searched for during this study may be present in the soils or groundwater at this site.

## REVIEW

This site assessment follows up an initial site investigation and report dated May 17, 1991, titled ENVIRONMENTAL SITE ASSESSMENT conducted at 117 TROY STREET RICHFORD, VERMONT for U.S. SMALL BUSINESS ADMINISTRATION by CON-TEST, INC.

Conclusions of the initial investigation were as follows:

1. Site investigations have revealed direct evidence of spills, leaks, and releases of materials to the environment. This is true for both the outdoor and indoor property.
2. Tentative confirmation of the release of materials to the subject site have been documented with a portable gas chromatograph
3. Information kept on file with the state of Vermont regarding the site has documented the clean-up of drummed hazardous waste on the subject site but no remediation of soils or clean up of the interior of the facility. Files also indicate the property changed hands many times and that a hazardous waste storage problem existed prior to the current ownership.
4. Waste piles comprised of debris possibly derived from the facility operations as well as from off-site sources are located in several areas on-site.
5. The subject site is in an environmentally sensitive area next to the Missisquoi river and wetlands.

conclusions cont.

6. Suspected asbestos containing materials are in poor condition.
7. Proper housekeeping methods, maintenance and storage of partially filled drums and/or containers of resins, glues, paints and possible lubricants located within the main manufacturing facility building needs to be maintained.
8. The possibility of an underground storage tank exists at the west end of the Outdoor Kiln.

Recommendations of this initial investigation were as follows:

1. Conduct a thorough inventory of remaining drums and analyze the contents of the drums for proper disposal of contents.
2. Determine whether an underground storage tank exists on - site at the Outdoor Kiln. In the event of an underground storage tank being present, determine the nature of any probable product in the tank and conduct its proper removal if possible or deactivate in place.
4. Collect additional soil samples in those areas where concentration of VOC's were detected by the Photovac 10S50 portable gas chromatograph to more fully define the probable extent of any contaminated soils.
5. Conduct the clean up and proper disposal of waste piles on-site.
6. Investigate the path of the sewer grate at the loading dock and at the Cold Storage shed to determine possible routes any probable spills or discharges to these sewer lines may have taken.
7. Investigate the possible contamination to the ground beneath the foundation at the floor drain discovered in the Grey Building.

recommendations cont.

8. Investigate areas of tentative contamination discovered in section 3.0 for extent of contamination and conduct laboratory analyses to quantify contamination and develop a plan for remediation.

The following actions were undertaken or supervised by Con-Test Inc. personnel to further assess the physical characteristics beyond the initial investigation. The actions undertaken did not attempt to address all of the Conclusions and Recommendations.

1. Installation of four monitoring wells to determine groundwater quality and determine groundwater flow. Survey of wells and river elevation.
2. Collection of soil samples during drilling and screened using a Photovac 10S50 portable gas chromatograph.
3. Groundwater samples gathered for analysis of volatile organic compounds by EPA Method 8240 and for Total Petroleum Hydrocarbon (TPH) concentrations.
4. Investigation of suspected underground storage tank (UST).

The following report includes all information gathered in the initial investigation and detailed reporting of subsequent actions undertaken as part of the Phase II investigation. Conclusions and recommendations of this report are based upon the results of the most recent investigation undertaken by or supervised by Con-Test, Inc. personnel.

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## 1.0 SITE INSPECTION

### 1.1 Introduction

Con-Test, Inc. personnel inspected the property at 117 Troy Street, Richford, Vermont on April 4 and 15, 1991 and collected a limited number of soil samples (April 15, 1991) for volatile organic compound screening, installed monitoring wells (August 2, 1991), surveyed well locations, depths, river elevation (August 16, 1991) and collected water samples for analysis by EPA Method 8240 and TPH (August 21, 1991) to locate any spill areas, potential spill hazards, or threats to the soil and/or groundwater at this site.

### 1.2 Site Description

The site is located approximately one mile south of Richford center on Troy Street (see Figure 1). The approximate 11 acre industrially zoned site is located behind an auto parts store and several small warehouse type buildings and an old railroad spur line. The site is located along the western bank of the Missisquoi river. Official documentation or maps were unavailable to determine whether the facility is located within the 100 year flood plain. However, based on historical evidence of photographs at the Town library, a flood inundating the area where the facility is currently located in 1927, its proximity to the river, and the surrounding topography, the potential exists for future flooding of the site to occur.

### 1.3 Indoor Property

The indoor property is comprised of a full production facility for the manufacturing of hockey equipment and supporting office space with separate and interconnected structures (see Figure 3).

Beginning from the west end of the property is the Grey Building. This is a two story, 5,100 square foot, wood frame structure used primarily to store hockey helmets and other supplies used in helmet production.

The structure was heated with forced hot air via an oil fired boiler. The above ground fuel tank for the boiler is presently located in the shed on the loading dock to the southeast (see Figure 3). A floor drain is located at the northwest corner on the first floor which leads beneath the structure. This floor drain also served a slop sink in that same corner of the building. According to Mr. Jamie O'Brien, current owner, (the "Owner"), this building was previously located farther northwest of its present location. Recorded information was unavailable to indicate the exact position of the original location of this building or dates when this structure was either moved or added onto.

The Cold Storage Building is a 1,584 square foot metal building with gravel floor. Hockey stick wood blank stock is stored in this structure. The Wooden Shed is a wood frame structure built over a dirt and cement foundation and is connected to the cold storage building. Historical records or photographs were not available to determine the purpose of the former structure. Within this 1,505 square foot structure was housed a forklift, manufacturing equipment, drums and pails of unknown content, light fixtures and assorted facility debris. Stained soils were observed which may be above a cement foundation.

Attached to this shed is the old Sawdust Shed which the owner stated was empty and not structurally sound. The shed is a two story structure with the first floor not sided and open to the weather. The interior of the second story of the Sawdust Shed was inaccessible for inspection. The Outdoor Kiln is a 432 square foot metal building with concrete floor. Stored within the kiln were some wood blanks and a small bobcat type earth moving piece of equipment.

Beginning from the opposite end of the main facility building, (see Figure 3) east to west, is the Warehouse. The warehouse covers 5,000 square feet and is an all metal construction with concrete floor. Two loading docks are located at the southwest corner. The structure is heated from the main boiler described later in this report. In the north corner of the warehouse is a door leading to the rear of the site. Along this same wall is a spray paint booth. The exhaust from the spraying operation was exhausted directly to the outside via a vent with no filtration. Approximately 20 to 25 drums are stored along this wall and in the northeast corner of the warehouse. The drums all contain varying quantities of product. Spills are evident on the floor and drums are not sealed. A partial inventory showed evidence of resins, hardeners and lubricants. A large door at the northwest corner leads into the Finishing Area. This building is approximately 6,000 square feet and has a concrete floor. Within the building is the necessary equipment to finish, paint and package the product. Located on the concrete floor in the western end of the building is a buildup of glue and resin.

Attached to the southern end of the production finishing line is the Office-Storage. This recently constructed (1980) addition is 2,880 square feet in area with two restrooms, offices, office supply storage, ink room, drop ceilings, supplemental electric baseboard heating to augment heat supplied from the boiler, 12" x 12" floor tile and evidence of roof leaks. The ink supply room had a considerable quantity (25-50 gal) of inks and thinners stored in mostly one gallon containers. In the western portion of the building is the Lunch room, where one restroom and a pool table are located. The Pro-Shop located between the finishing and Office spaces is currently storing product stock and its 12" x 12" floor tiles (suspected to contain asbestos) were in very poor condition due to moving heavy equipment across the floor. The Production Quonset is 9,240 square feet in area with cement floor. Stored in this building is the equipment necessary for producing hockey sticks. This is a large open plan area as are the other areas aside from the Office-Storage building. Several drums are located at the west end and contain trash. At the west end of the Quonset is the facilities Receiving Area. This space was mostly vacant except for some machinery. To the north of the Quonset is a Machine Shop. The shop is approximately 576 square feet in area and houses several small tooling machines, tools and various parts to service the production facility. The floor is concrete.

To the north of the Machine shop is a smaller Kiln. The kiln is approximately 320 square feet in size and was empty. A small area of the concrete (less than 2 square feet) floor had a small product stain in the kiln area.

Northeast of the kiln is the Boiler room. There are two boilers. One is a more modern oil fired type serviced by the fuel tank outside the east wall of the boiler room. The other larger boiler is a combination oil and wood fired boiler which appears to be covered with asbestos containing insulation. Pipes leading from the boilers also appear to be covered with asbestos containing insulation, including those pipes outside between the boiler room and the outdoor kiln.

Several drums were located between the machine shop and indoor kiln. Contents are believed to be lubricants. The main facility Electrical Room is attached to the southwest end of the Quonset and has a concrete floor and houses, compressors and breakers for the facilities power supply. The total facility is approximately 35,472 square feet in size.

The site visit was conducted on an overcast day. Power was cut off to the site and visibility within the building even aided with a flashlight was poor. Windows and doors to provide light were few. Many parts of the floor were obscured with machinery, stock and inventory.

The facility looks much as it must have after a typical day of production due to the amount of material within the structures and the amount of hockey sticks in various stages of manufacture. The office area had been cleared of office equipment and supplies that would be needed to run the facility. All area measurements were supplied by the owner in a summary sheet titled Northland Plant - Buildings (see Appendix B). Richford town records indicate that the facility is connected to village water and sewer.

#### 1.4 Outdoor Property

Entrance to the property is via a right of way across Central Vermont Railroad property from Troy Street adjacent to the western edge of the site. Pavement extends from the loading docks to the Central Vermont railroad spur. A sewer grate is located at the entrance to the loading docks. Two above ground fuel tanks were located outside of the southern corner of the facility. On August 2, 1991 when monitoring wells were installed these tanks were no longer present. A dirt roadway leads around the warehouse to the rear on the north side of the facility. The warehouse has a rear door. Outside this door are areas of stained soils (see Figure 3). A partially filled 5 - gallon bucket containing an asphalt compound was located lying on its side and a portion of the hardened compound was covering the ground surface. A back door from the finishing building has similar stained soil outside the door although no 5 - gallon buckets of asphalt compound was observed in the area.

A large fiberglass hopper is located behind the Finishing building. Fiberglass debris was observed covering the ground in the vicinity of the hopper. One drum filled with fiberglass type material was also located in the area. At the north side of the Quonset are wooden pallets overlying bare ground which may have been a possible storage area. A small drainage pipe is at the corner of the machine shop and boiler room walls and leads to a drainage swale which fans out to the northeast and onto the rear roadway. This area is just south of the aboveground storage tank (see sec 1.7).

Large amounts of sawdust are located to the east of the boiler room and to the north of the large kiln. Several hoppers are at the same locations. These hoppers were part of a system to move sawdust about for disposal and use as a fuel for one of the boilers. An approximately three inch diameter pipe extrudes approximately two feet from the ground surface and is located approximately two feet from the western side of the large kiln. The top of the pipe is threaded and is capped with a threaded cover screwed into place (see sec 1.6).



Several drums are stacked at the east side of the large kiln.

One approximately 10 gallon plastic drum of Aqua-Chem-60 was found behind the Wooden shed on April 15, 1991. This drum was not present during the initial site inspection performed on April 4, 1991.

A drum storage area is located approximately 30 feet from the west end of the Receiving Area connected to the Production Quonset. These drums appear to be filled with trash except for one drum filled with a liquid. During the initial site inspection on April 4, 1991 one drum was observed filled with a liquid which had a thick oily dark surface and on a follow-up site inspection on April 15, 1991 the barrel was observed tilted on a 45 degree angle with less liquid and only an oily dark sheen remained on the surface of the water and on the sides of the barrel.

Stained soils were also observed at the following locations in addition to those previously mentioned; in front of the Cold Storage Shed and to the southwest of the grey building, off the west corner of the Grey building approximately 20 feet and in the vicinity of the drum storage area 30 feet from Receiving (see Figure 3). Drums were located west of the nearby cemetery and a burn pile is about 75 yards off the Grey building to the southwest. These sites may not be on the subject site due to the sketchy information regarding the site survey plan.

The site property to the north and west is a partially wooded old field. Remains of an old foundation and dilapidated structure are still present and presumably were from the Atlas Mill (see Site History Sec 2.0). Nine sewer manholes were noted on the survey plan (see Figure 2) provided to Con-Test by the owner but only three were actually observed. Those observed were directly behind the Finishing building and one located in the field northwest of the abandoned mill. Trash piles were also observed in front of the abandoned mill which the owner confirms that these piles are the result of unpermitted disposal activities by unidentified individuals. Transite pipe was observed in this location. The property runs along the river to the north and west and several old concrete foundation pieces were visible and several scrap piles of duct work and various facility materials were present (galvanized piping, old manufacturing equipment, rusty hopper). The property is generally flat except along the steep sided river bank and where rolling topography was observed to the south. Wetlands were noted in the vicinity of the investigated site.

### 1.5 Nearby Properties

The river borders the entire north eastern boundary. To the north and west of the facility are residential neighborhoods. A cemetery is located to the west. A portion of the former Missisquoi Railroad, now the Central Vermont Railroad, borders the facilities' southwest property line. Several storage buildings and an auto parts store are positioned between the facility and Troy Street. Open pasture is to the south of the facility.

### 1.6 Underground Storage Tanks

One underground storage tank (UST) exists at the north end of the main building facility between the large kiln and wood storage shed (see Figure 3), based on the presence of a fill/vent pipe extruding from the ground and a sample gathered from the fill/vent pipe. A 40 milliliter (ml) glass vial was lowered through the pipe with monofilament nylon line and a product sample was gathered for analysis using a Photovac 10S50 portable gas chromatograph (see Appendix D), tentatively identified as #2 fuel oil. The fill/vent pipe is approximately 1 1/2 to 2 feet above grade and on a 30 degree angle. A measurement of 7 feet 5 inches was taken from the top of the vent/fill pipe to the bottom of the UST. The owner was uncertain whether a UST was present on-site.

#### 1.7 Aboveground Storage Tanks

One tank approximately 4 feet high by approximately 8 feet long is located outside of the facility at the corner of the machine shop and boiler room walls at the rear of the facility. This tank was used to supply #2 fuel to the boiler.

Two empty, above ground fuel tanks (each tank approximately 2,000-3,000 gallon capacity) were located at the south corner of the warehouse. The owner stated that these tanks came from a gas station and were to be utilized for fuel storage for the facility boiler. The tanks were reportedly never put into service at the subject facility. These tanks are no longer present on-site as noted during the drilling on August 2, 1991.

## 2.0 SITE HISTORY

### 2.1 Introduction

The purpose of this section is to review the history of the site and to document any previously reported problems regarding hazardous materials or potential receptors in the area. A record of contacts made and files reviewed during this assessment can be found in Appendix A.

### 2.2 History of Usage

Early in the 1800's the site was believed to be virgin forest and river plain. Late in the 1800's it was the site of Brainerd's Mill which produced wood products such as lumber. Spurs for the Missisquoi Railroad and Depot were present during the latter part of the 1800's. In the 1920's the mill was operated by the Richford Manufacturing Company which produced spruce butter tubs. The Richford Manufacturing Company also constructed a new mill on-site sometime between 1920 -1925. In 1925, the Atlas Plywood and saw mill was present and was later destroyed in 1927 by a flood which inundated the entire site as well as most of the town. This information was obtained from Richford Vermont, Frontier Town, By Jack C. Salisbury.

A 1941 town map shows the presence of the railroad spur, coal shed, store house and depot. The subject site has been utilized for commercial and industrial purposes up to the present day. A trip report by Mike Nelson (dated May 9, 1988) of the Vermont Agency of Natural resources (ANR) states the original hockey stick business was started by a local Catholic priest. During the 1970's the business was purchased by Northland Group. A series of property transfers, one bankruptcy, property seizure by federal marshals and more transfers has lead to the current owners of Northland Sports Inc. as recorded at the town assessors office.

## 2.3 Previous Incidents and Violations

### On-Site

State of Vermont Agency of Natural Resources (ANR) files were reviewed and local officials were interviewed to determine if there have been any reported problems on-site or at adjacent neighboring properties concerning hazardous materials.

The Vermont ANR administered a contract for the removal of hazardous waste from Northland Sports in Richford, VT (bids dated February 27, 1990). The contract work has been completed. Information from the State's contract specifications required the removal of 55 gallon drums with hazardous waste and the disposal of empty drums. The total number of drums reportedly removed numbered approximately 125. Soil remediation was not required under this contract.

Files at the State of Vermont's Department of Environmental Conservation, Hazardous Materials Management Division indicate that the Northland Sports Inc. (previously the Northland Products Co.) is a RCRA generator and currently listed as out of business, OB 06-12-001.

#### Off-Site

One off site area is the river street dump site which is located approximately 3/4 of a mile to the northwest of and hydraulically downgradient of the Northland Sports facility. The river street dump site was preliminary assessed by Michael Young of the Vermont Agency of Natural Resources, Department of Environmental Conservation, Hazardous Materials Management Division in June of 1990 for its' past uses and its classification as a potential hazardous waste site as a result of previous unpermitted disposal activities in the area.

#### 2.4 Potential Receptors

The Missisquoi river defines the northwestern to southeastern property of the Northland Sports facility. This section of the river bordering the subject site is classified as Class B Water as defined by the Vermont Water Quality Standards, adopted April 17, 1991. Management objectives for this class water include a value of water that "consistently exhibits good aesthetic value and provides high quality habitat for aquatic biota, fish and wildlife." and potential use as "public water supply with filtration and disinfection; irrigation and other agricultural uses; swimming and recreation.".

#### 2.4 Potential Receptors cont.

Three private water wells are located approximately within one-half to three quarters of a mile of the subject site and listed as number 2, 21 and 44 with the State of Vermont, Ground Water Supply office. (see figure 1). The closest well, #2 Missisquoi Manufacturing Co., is 70 feet in depth and yields 30 gallons per minute. The well report listed boulders and coarse gravel from 0 to 35 feet, sand and gravel from 35 to 57 feet and gravel to 70 feet. This well is hydraulically upgradient of the facility. Well #21 and #44 are hydraulically downgradient. Number 21, Cliffton Holmes is 621 feet in total depth yielding 50 gallons per minute and the well report listed 0 - 5 feet as clay and 5 to 621 feet as a shist layer. Number 44, Davis Bros. Farm is 877 total feet in depth yielding 7 3/4 gallons per minute with a well report listing 0 to 15 feet as clay and stones and 15 to 877 feet as shist.



### 3.0 SOIL SAMPLES

#### 3.1 Soil sample analyses

Surface and subsurface (maximum depth of 14 inches) soil samples were collected throughout the site from selected locations determined during the first site visit (see Figure 3). Soil samples were collected in an attempt to better define the possible extent of any ground surface contamination that may be present on-site as a result of historical site activities. All samples were collected using a hand auger which was decontaminated between samples points. A rinse with a 20 percent solution of methanol followed by distilled water rinse was used to decontaminate the hand auger. Soil samples were placed in separate 40 ml VOC viles, preserved at 4 degrees C. until they were analyzed off-site with a Photovac 10S50 portable gas chromatograph.

Volatile organic compounds (VOC) were detected at soil sample locations 03, 03B, 08, 10 and 14. Results of the soil analyses using the Photovac 10S50 portable gas chromatograph are presented in Table 1. Sample number 14, collected from a soil pile located in front of the grey building (see Figure 3) had the highest reported levels of VOC's at 3000 parts per billion (ppb).

TABLE 1

Soil Sample Analysis Results by Photovac 10S50 Portable Gas Chromatograph

Northland Sports Inc.

Richford, Vermont

April 1991

<u>Sample #</u>	<u>Location</u>	<u>Depth</u>	<u>Results</u>	<u>Comments</u>
01	8' east of SE warehouse door	0-4"	ND	
01B	"	8-12"	ND	
02	6' east of NE production Bldg door	0-3"	ND	
02B	"	12-14"	ND	
03	8' from base of N Machine shop window in drain swale	0-5"	Hydrocarbon Mix 50 ppb	
03B	"	10-12"	Hydrocarbon Mix 200 ppb	odor
04	N of outdoor kiln 3' NW of drums	0-6"	ND	
05	4' west of outdoor kiln next to pipe	24"	ND	first 6" of boring sawdust
06	3.5' of NW Corner of Quonset	6-9"	ND	
07	East side of drum pile west of Receiving app. 75'	surface	ND	
08	water sample of leaning drum from location 07		BTEX 200 ppb	

TABLE 1 cont.

<u>Sample #</u>	<u>Location</u>	<u>Depth</u>	<u>Results</u>	<u>Comments</u>
09	1' NE of foundation wall inside wooden shed	0-3"	ND	
10	SE of Grey Bldg Lower concrete pad 3' NW of raised concrete	surface	Hydrocarbon Mix 15 ppb	late peaks
11	Depression 3' off raised concrete pad SE of Grey Bldg	0-6"	ND	
12	Stained soil app. 20' off west end of Grey Bldg	Surface	ND	
13	2' NE off Grey Bldg loading dock	0-3"	ND	
14	10' N of Grey Bldg at base of soil pile	surface	Hydrocarbon Mix 3000 ppb	late peaks ethylbenzene xylenes

#### 4.0 SUBSURFACE INVESTIGATION

##### 4.1 Introduction

Conclusion from the site investigation and the historical review indicate that there is potential for contamination from past and present on-site sources. A sampling strategy was developed to test soils and groundwater for volatile organic compounds.

##### 4.2 Monitoring Well Installation

A total of 13 test borings were drilled on August 2, 1991. Of these, only four borings were able to be converted into groundwater monitoring wells. The borings and wells were drilled by Kennedy Drilling of Troy, New Hampshire under the supervision of Con-Test, Inc. personnel (locations and elevations are plotted on Figure 3 - Facility Site Plan). Five monitoring wells were originally proposed. Due to subsurface rubble and surface obstructions (ie., building, conveyor belts and electric lines), two proposed well locations were abandoned with no drilling attempted. Several alternate well locations were abandoned for technical refusal prior to reaching groundwater and are plotted on figure 3. One alternate monitoring well location was installed. Soil screenings for these abandoned wells, when sampled, are noted on figure 3.

#### 4.2 Monitoring Well Installation cont.

A Mobile B-57 rotary drill rig drilled the wells using six (6) inch augers. During drilling operations, soil samples were collected at every five foot interval by split spoon method for descriptive analysis and VOC (Volatile Organic Compound) screening. One 10-foot section was placed on the bottom of each well, except well # 2 (total depth 3'6"), followed by two-inch schedule 40 PVC casing as required. Well casing joints were physically connected so that no binding agents or cements were used.

Approximately eleven feet of filter pack was poured around the screen of each individual well, and approximately one foot of pelleted bentonite was poured around the casing to provide a seal at least one foot above the screen. Cast road boxes were placed over the casing and cemented into place at ground level. The wells were drilled to a maximum depth of 16 feet. Well elevations were surveyed to 0.01 feet by Con-Test, Inc. personnel using a surveyor's level. Well elevations were tied to an arbitrary datum (north corner of outdoor kiln) so that well elevations, groundwater elevations and river elevations are relative. As built well diagrams appear in Appendix C.

#### 4.3 Site Geology

The subject site consists of medium to fine sands over very fine sand, silts and some clay. Areas of organic matter were encountered at the ten foot interval in well #1 and #6 and at five foot in well #3. Monitoring well #2 reached refusal at three feet six inches similar to abandoned borings 2A (3'5"), 2B (4'2"), 2C (2'0") and 2D (3'6"). Monitoring well #2 is believed to set atop bedrock as evidenced by a ledge outcropping at the the river bank approximately 25' to the northeast. Abandoned borings 5A, 5B and 5C reached refusal at approximately 4 feet. Abandoned boring 3A reached refusal at or near grade. Abandoned boring 4A reached refusal at 7 feet 4 inches. Auger cuttings at the base of these borings suggested a cement obstruction. Scrap metal was found in boring 5A. Review of aerial photographs on file with the State of Vermont, Department of Environmental Conservation show an extensive foundation in ruin at the subject site. This may explain cement cuttings in abandoned borings 5A, 5B, 5C, 3A and 4A.

Based on information presented in Vermont Geological Survey's Bulletin No. 23 (The Geology of the Enosburg Area, Vermont, 1964 by John G. Dennis), the bedrock underlying the site facility is mapped as the Underhill Formation. The Underhill Formation is composed mainly of a greenish quartz-chlorite-sericite phyllite. Bedrock was not encountered during test borings or monitor well installations.

#### 4.4 Monitoring Well Soil Samples

Soil samples were collected during the drilling at five foot intervals. These samples were screened for volatile organic compounds (VOC's) using a Photovac 10S50 portable gas chromatograph. A record of these screening appear in Appendix D.

All the soil samples obtained during the placement of monitoring well #1, #2, #3 and #6 and abandoned borings 2A, 4A and 5A had detectable levels of VOC's (from photovac screening) throughout the surface and five foot interval and depths of ten foot where sampled to that depth.

Soil samples screened from monitoring well #1 and abandoned boring 2A (samples #'s SBA-1-01..04, SBA-2-01) had an identification of a hydrocarbon mix with tentative concentrations at trace levels. Soil samples screened from monitoring well #2 (samples #'s SBA-2-02,03) had an identification of a hydrocarbon mix with a tentative concentration at 50-70 parts per billion (ppb) at the 0 to two foot interval and 1.6 to 2.0 parts per million (ppm) at the base of the well at 3 foot six inches. Soil samples screened from monitoring well #3 (samples #'s SBA-3-01..03) had an identification of a hydrocarbon mix with tentative concentrations ranging from 10 to 125 ppb. Soil samples screened from abandoned boring 5A (samples #'s SBA-5-01) had an identification of a hydrocarbon mix with tentative concentrations ranging from 10 to 25 ppb.

#### 4.4 Monitoring Well Soil Samples cont.

Soil sample screened from abandoned boring 4A (sample SBA-4-01,02) had an identification of a hydrocarbon mix with a tentative concentration of 5 to 10 ppb. Soil samples screened from monitoring well #6 (samples SBA-6-01,02) had an identification of a hydrocarbon mix with a tentative concentration of trace to 15 ppb. Samples SBA-6-03,04 were non-detected for VOC's. These two samples were at the ten and fifteen foot intervals, respectively.

#### 4.5 Groundwater Flow

Depth to groundwater was determined on August 16, 1991. Depth to groundwater ranged from 13.3 feet (monitoring well #1) to 3.64 feet (monitoring well #3) from the top of the PVC casing. Monitoring well #2 recorded a level of 2.4 feet but is believed to be uncharacteristically high due to a water table perched above ledge. This ledge is visible from the bank of the adjacent Missisquoi river. These values were subtracted from the surveyed well elevations, except for well #2 for the reason stated above, allowing for the construction of groundwater contours. Approximate groundwater flow is to the northeast on the subject property. See Figure 3 for the groundwater contours established on the site plan for the subject property with respect to the three monitoring wells (used as control points).



#### 4.6 Chemical Analysis of Groundwater Samples

Groundwater samples were collected on August 21, 1991 and analyzed for Total Petroleum Hydrocarbons (TPH) and EPA Method 8240 for volatile organic compounds. A record of these results appear in Appendix E. Petroleum Hydrocarbon compounds in monitoring wells #1 and #6 were non-detected for both analyses. Monitoring well #3 was non-detected for EPA method 8240 but recorded a level of 3.7 milligrams per litre (mg/l) for TPH. Monitoring well #2 recorded levels of Ethylbenzene (320 micrograms per litre (ug/l)) and Xylenes at 890 ug/l for EPA method 8240 and a value of 9.0 mg/l for TPH. Product sheens were noted during groundwater sampling of monitoring wells #2 and #3.

## 5.0 CONCLUSIONS AND RECOMMENDATIONS

### 5.1 Introduction

An Environmental Site Assessment has been conducted at 117 Troy Street in Richford, Vermont for the purpose of determining to a reasonable extent whether hazardous materials are present, may have been released, or that there is a threat of release on the site. The assessment includes a historical review, contact with local officials, grab soil sample screening and a site inspection. Thirteen test borings were drilled and four monitoring wells were installed. The following represents the conclusions of this assessment and recommendations suggested to reduce the risk of liability.

### 5.2 Conclusions

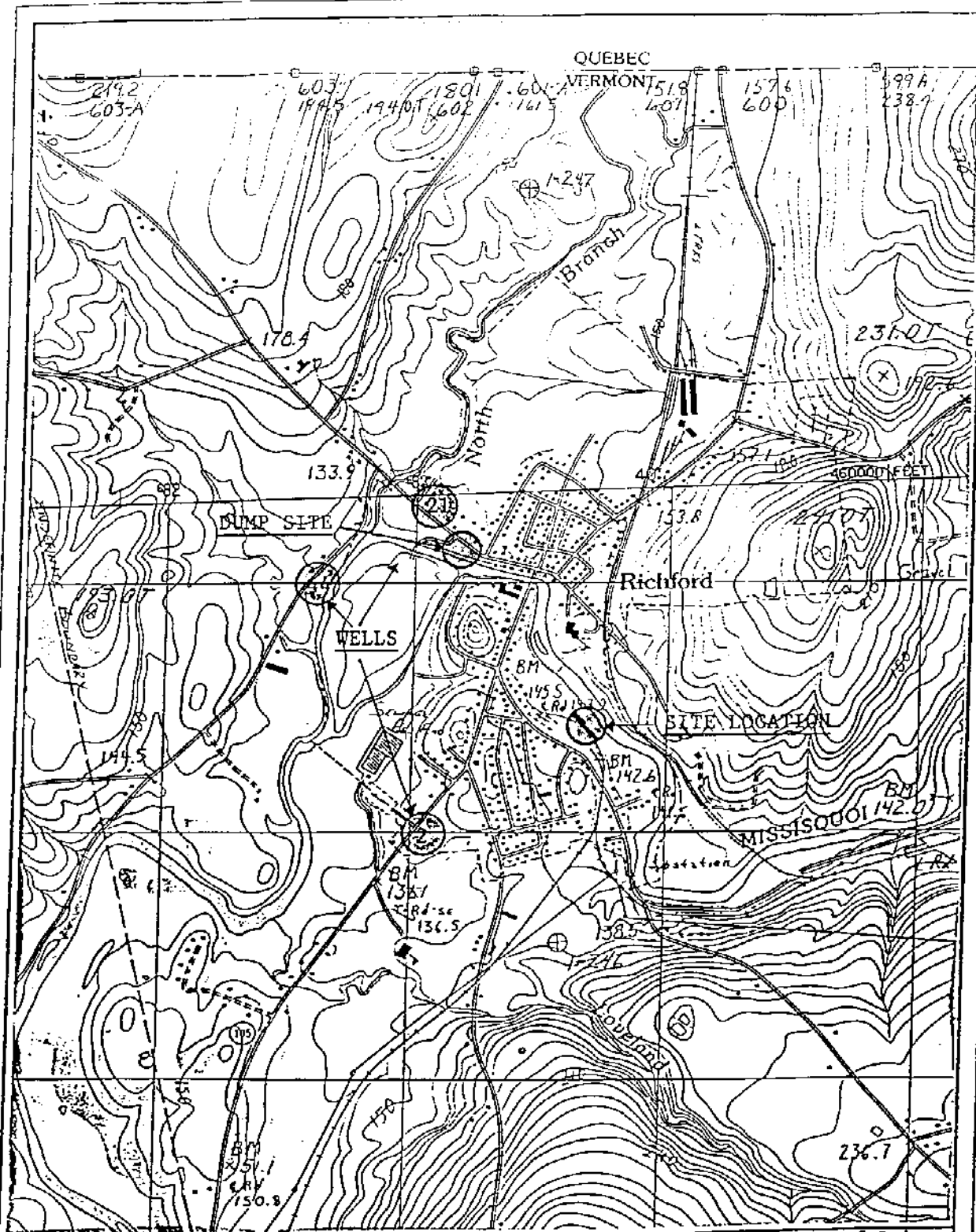
1. Site investigations have revealed direct evidence of spills, leaks, and releases of materials to the environment. This is true for both the outdoor and indoor property.
2. Confirmation of the release of materials to the subject site have been documented with laboratory analyses for volatile organic compounds EPA Method 8240 (Monitoring well #2) and Total Petroleum Hydrocarbons ((TPH) Monitoring well #2 and #3).
3. Information kept on file with the state of Vermont regarding the site has documented the clean-up of drummed hazardous waste on the subject site but no remediation of soils or clean up of the interior of the facility. Files also indicate the property changed hands many times and that a hazardous waste storage problem existed prior to the current ownership.

4. Waste piles comprised of debris possibly derived from the facility operations as well as from off-site sources are located in several areas on-site.
5. The subject site is in an environmentally sensitive area next to the river and wetlands.
6. Suspected asbestos containing materials are in poor condition.
7. Proper housekeeping methods, maintenance and storage of partially filled drums and/or containers of resins, glues, paints and possible lubricants located within the main manufacturing facility building needs to be maintained.
8. An underground storage tank exists at the west end of the Outdoor Kiln and contains product.

### 5.3 Recommendations

1. Notify the State of Vermont that a release has occurred on the subject site and coordinate any further analyses with the state to document contaminant levels and the potential need for remediation.
2. Conduct a thorough inventory of remaining drums and analyze the contents of the drums for proper disposition or disposal of contents.
3. An underground storage tank being present at the Outdoor kiln, containing #2 fuel oil as tentatively identified using a portable gas chromatograph, conduct the proper removal of the product and either properly excavate the tank or deactivate in place.
4. Conduct the proper re-engineering of the aboveground storage tank to prevent spills, provide leak detection and remediate contaminated soils as determined or needed from recommendation number 1.
5. Collect additional soil samples in those areas where concentration of VOC's were detected by the Photovac 10S50 portable gas chromatograph, EPA Method 8240 and TPH to more fully define the probable extent of any contaminated soils.

6. Conduct the clean up and proper disposal of waste piles on-site.
7. Investigate the path of the sewer grate at the loading dock and at the Cold Storage shed to determine possible routes any probable spills or discharges to these sewer lines may have taken.
8. Investigate the possible contamination to the ground beneath the foundation at the floor drain discovered in the Grey Building.
9. Sample suspected asbestos containing materials and conduct its proper removal if suspect materials are found to contain asbestos.

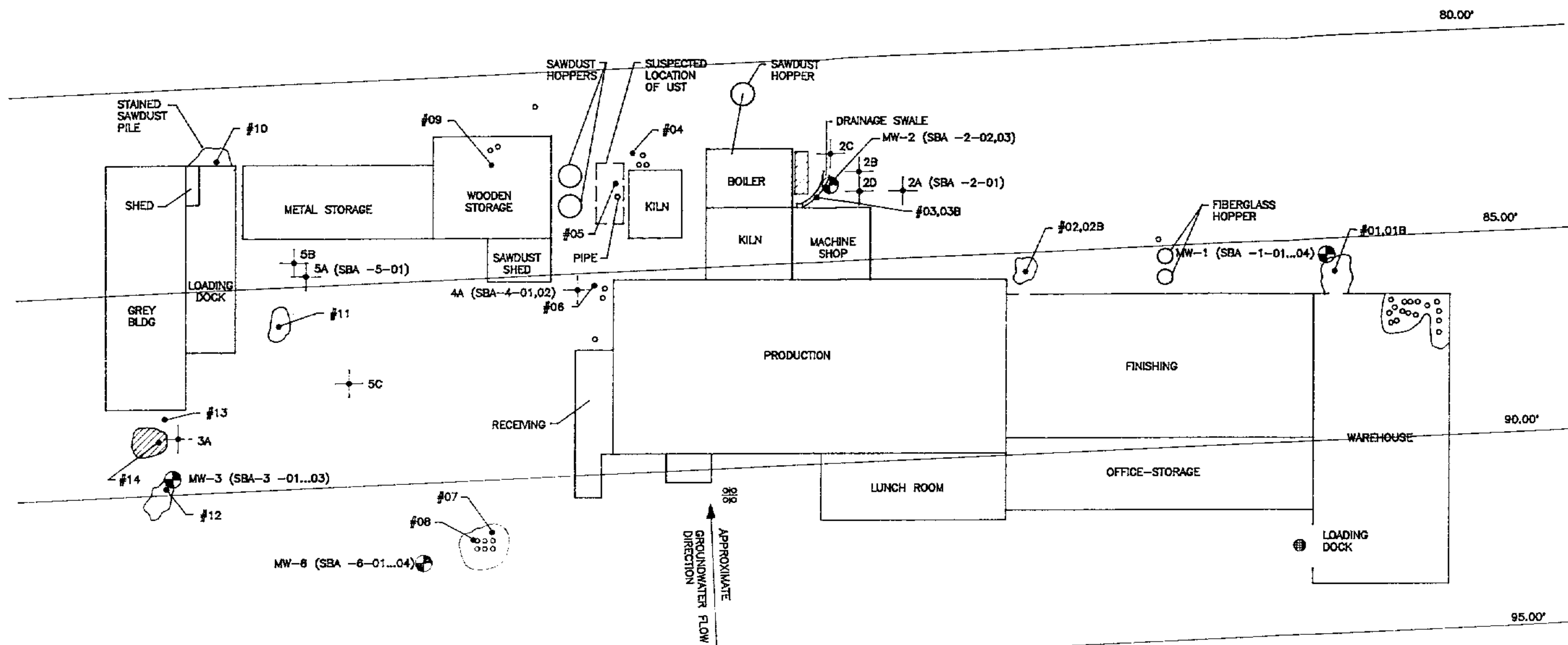


**CON-TEST Inc.**  
WATER AND AIR ENGINEERING

18 Blair Park Road  
Suite 301  
Williston, VT P.O. Box 825  
05495

SITE LOCATION MAP

PREPARED FOR	U.S. SBA	SOURCE	USGS
PROJECT NAME	Richford	PROJECT #	77072
SITE LOCATION	117 Troy ST. Richford, VT	SCALE	none

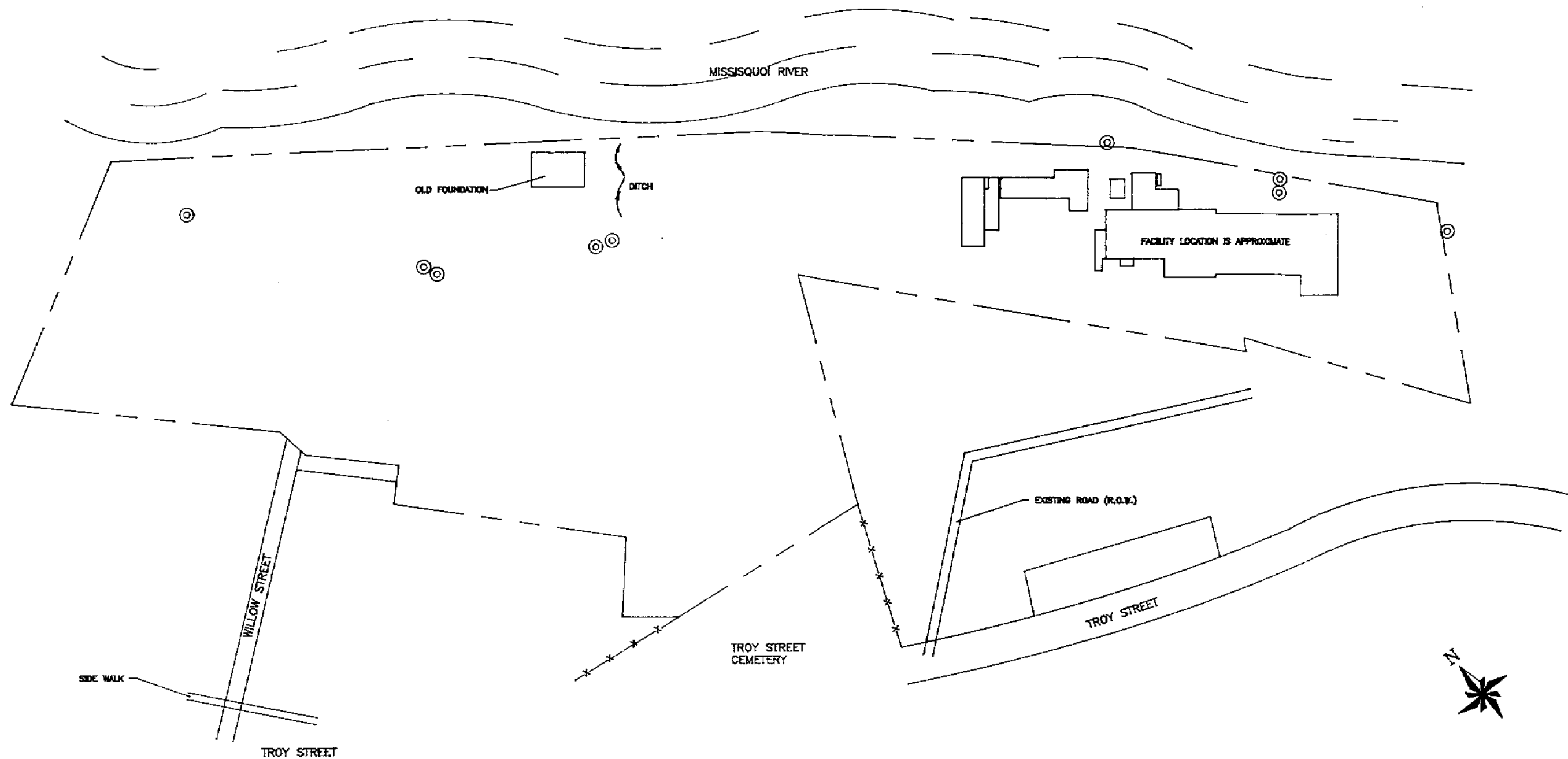


KEY	
	GROUNDWATER CONTOUR
	SEWER GRATE
	SOIL PILE
	STAINED SOIL
	DRUM STORAGE AREA
	DRUM(S) LOCATION
	UTILITY POLE WITH TRANSFORMERS
	FUEL TANK ABOVE GROUND
	SAMPLE LOCATION
	ABANDONED SOIL BORING
	MONITORING WELL

**NORTHLAND SPORTS  
RICHFORD, VT.  
FACILITY SITE PLAN**

FIGURE 3

CON-TEST INC.	
39 SPRUCE - P.O. BOX 591 EAST LONGMEADOW, MA 01028	
DRAWN BY: J.A.D.	
DATE: 5/91 REVISED--	
APPROVED BY:	
SITE PLAN	
SCALE: N.T.S.	DWG. NO. E77072P2



KEY	
⊙	SEWER MANHOLE
-X-X-	FENCE

**NORTHLAND SPORTS  
RICHFORD, VT.  
SITE SURVEY PLAN**

FIGURE 2

<b>CON-TEST INC.</b>	
39 SPRUCE - P.O. BOX 591 EAST LONGMEADOW, MA 01028	
DRAWN BY: J.A.D. DATE: 5/91    REVISED-	
APPROVED BY:	
SITE PLAN	
SCALE: 1"=120'-0"	DWG. NO. E77072P1



APPENDIX A  
ENVIRONMENTAL SITE ASSESSMENTS  
HISTORICAL REVIEW

SITE NAME: Northland Sports

CLIENT: U.S. Small Business Administration    SITE ADDRESS: 117 Troy Street  
Richford, Vermont

D.E.C. FILES

DATE	FILE
4\8\91	Hazardous Waste Sites
4\8\91	Permit Files for Underground Storage tanks
4\8\91	Groundwater Supply
_____	_____
_____	_____

TOWN OFFICES

DATE	OFFICE
4\15\91	Town Clerk
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

DIG SAFE

<u>DATE CONTACTED</u>	<u>APPROVED DATE &amp; TIME</u>	<u>PERMIT NUMBER</u>
<u>7-22-91</u>	<u>7-25-91      1545</u>	<u>91302197</u>

## APPENDIX B

NORTHLAND PLANT - BUILDINGS

GREY BUILDING - 5,100 Square feet

1. Loading Platform
2. Hot Air Heating System
3. Two Story Building
4. 30 X 85 feet per floor

STORAGE BUILDING - 3089 Square feet

1. Metal Buildings, wood framing - 22 X 72 feet
2. Wooden Building - 35 X 43 feet

DRY KILNS - 752 Square feet

1. Large, 432 Square feet
2. Small, 320 Square feet

BOILER ROOM - 576 Square feet

1. One oil burner
2. One combination - oil or sawdust feed.

MACHINE SHOP - 576 Square feet

COMPRESSOR ROOM - 208 Square feet

MAIN MANUFACTURING - 9240 Square feet

1. Contains all woodworking equipment.
2. 154 X 60 feet
3. Quonset type constuction

FINISHING DEPARTMENT - 6000 Square feet

1. Contains equipment to finish, screen and package product
2. 120 X 60 feet

WAREHOUSE - 5000 Square feet

1. All Metal Building
2. Two Loading Docks
3. Heated from main boiler
4. 100 X 50 Feet

NORTHLAND PLANT BUILDINGS CON'T

OFFICE - 2880 Square feet

1. Eight separate rooms plus lobby
2. Partially finished second floor
3. Heated from main boiler and Electric base boards
4. Air Conditioned
5. Two restrooms

LUNCH ROOM - 1200 Square feet

1. Ladies restroom
2. 60 X 20 feet

CUSTOM STICK MANUFACTURING - 720 Square feet

1. Equipment and Storage for special made patterns
2. 60 X 12 feet

Total non production areas -- 12,216 Square feet

Total production area -- 23,256 Square feet

Total Area -- 35,472 Square feet

## APPENDIX C



CON-TEST Inc.  
WATER AND AIR ENGINEERING

SAMPLE NUMBER	BLOWS PER 6 INCHES	INCHES RECOVERED INCHES DRIVEN	WATER ELEVATION	DEPTH IN FEET	WELL OR PIEZOMETER CONSTRUCTION	GRAPHIC LOG	LOG OF BORING NO. <u>MW-1</u>		TESTS
							DATE DRILLED: <u>8/2/91</u>	PROJECT: <u>U.S. SBA RICHFORD</u>	
							JOB # <u>77082</u>	DETECTOR: <u>PHOTOVAC 10S50</u>	
							DESCRIPTION		
1-1	24,39,26 15	3/24					ORGANIC SANDY LOAM- PEBBLES	trace	
1-2	5,10,7,3	3/24		5'			MED-COARSE SAND PEBBLES/ SUB ROUNDED	trace	
1-3	2,3,6,10	18/24		10'			SILT LOAM/ ORGANIC GRAY V.FINE SAND/SILT MOIST	N.D.	
1-4	16,77,100	9/18		15'			GREY GREEN CLAY LOAM LEDGE (WET)	N.D.	
				20'					
				25'					
				30'					

COMMENTS: _____ _____ _____ _____	FILTER PACK: <u>3/4"</u> TO <u>1/4"</u>	WATER LEVEL MEASUREMENTS <u>▽: 13.30'</u> DATUM: <u>TOP OF CASING</u> PURGING: <u>3X VOLUME</u>
	BENTONITE: <u>2'6"</u> TO <u>3'4"</u>	
	SCREEN: <u>6'</u> TO <u>16'</u>	
	GEOLOGIST: <u>G.R. URICH</u> DRAWN BY: <u>CEB</u>	



CON-TEST Inc.  
WATER AND AIR ENGINEERING

SAMPLE NUMBER	BLOWS PER 6 INCHES	INCHES RECOVERED INCHES DRIVEN	WATER ELEVATION	DEPTH IN FEET	WELL OR PIEZOMETER CONSTRUCTION	GRAPHIC LOG	LOG OF BORING NO. MW-2	TESTS
							DATE DRILLED: 8/2/91 PROJECT: U.S. SBA RICHFORD JOB # 77082 DETECTOR: PHOTOVAC 10S50	
2-2	12,10,7,4	10/24					DESCRIPTION	
							DK BROWN MED-COARSE SAND	50-
							LT BROWN MED SAND	70
							GREY BROWN, MED-FINE SAND	ppb
							DARK BLACK SILT LOAM	
2-3	100	2/2		5'			WELL CAP	1.6
							NO SAMPLE	2.0
							(WET)	PPM
				10'				
				15'				
				20'				
				25'				
				30'				

COMMENTS:	FILTER PACK: 1'4" TO 3'6"	WATER LEVEL MEASUREMENTS
	BENTONITE: 1' TO 1'4"	▽: 2.40'
	SCREEN: 0" TO 3'6"	DATUM: TOP OF CASING
		PURGING: 3X VOLUME
GEOLOGIST: G.R. URICH DRAWN BY: CEB		



CON-TEST Inc.  
WATER AND AIR ENGINEERING

SAMPLE NUMBER	BLOWS PER 6 INCHES	INCHES RECOVERED INCHES DRIVEN	WATER ELEVATION	DEPTH IN FEET	WELL OR PIEZOMETER CONSTRUCTION	GRAPHIC LOG	LOG OF BORING NO. MW-3	TESTS
							DATE DRILLED: 8/2/91 PROJECT: U.S. SBA RICHFOED JOB # 77082 DETECTOR: PHOTOVAC 10S50	
3-1	7,5,43,50	12/24					DESCRIPTION	
							ORGANIC MATTER LT BROWN SAND LOAM MED-FINE SAND W/ PEBBLES DK BROWN FINE-VERY FINE SAND	95 125 ppb
3-2	2,1,1,2	24/24		5'			MOIST DK BROWN SANDY LOAM GREY SILT-LOAM GREY BROWN VERY FINE SAND W/ORGANIC WATER	40 -60 ppb
3-3	9,19,44,23	24/24		10'			GREY BROWN MED-FINE SAND DK BROWN MED SAND W/ PEBBLES & FRAGMENTS	10- 20 ppb
				15'				
				20'				
				25'				
				30'				

COMMENTS: _____ _____ _____ _____	FILTER PACK: 1' TO 9'4"	WATER LEVEL MEASUREMENTS ▽: 3.64' DATUM: TOP OF CASING PURGING: 3X VOLUME
	BENTONITE: 0" TO 1'	
	SCREEN: 0" TO 9'4"	
	GEOLOGIST: G.R. URICH DRAWN BY: CEB	





CON-TEST Inc.  
WATER AND AIR ENGINEERING

SAMPLE NUMBER	BLOWS PER 6 INCHES	INCHES RECOVERED INCHES DRIVEN	WATER ELEVATION	DEPTH IN FEET	WELL OR PIEZOMETER CONSTRUCTION	GRAPHIC LOG	LOG OF BORING NO. MW-6		TESTS
							DATE DRILLED: 8/2/91	PROJECT: U.S. SBS RICHMOND	
							JOB # 77082	DETECTOR: PHOTOVAC 10S50	
							DESCRIPTION		
6-1	29,30,6,6	3/24					BROWN SANDY LOAM MED-FINE SAND	5-15 ppb	
6-2	2,2,2,4	4/24		5'			BROWN V.FINE SAND SILT DK. BROWN, BLACK SANDY LOAM	TRACE	
6-3	6,9,29,25	4/24		10'			BROWN FINE-V.FINE SAND FRAGMENTS (MOIST)	N.D.	
6-4	---	---		15'			(WET)	N.D.	
				20'					
				25'					
				30'					

COMMENTS:	FILTER PACK: 3' TO 14'4"	WATER LEVEL MEASUREMENTS
	BENTONITE: 2' TO 3'	
	SCREEN: 4'4" TO 14'4"	
GEOLOGIST: G.R. URICH	DRAWN BY: CEB	

▽: 4.60'
DATUM: TOP OF CASING
PURGING: 3X VOLUME

## APPENDIX D

322

**CLIENT: US SBA**

DATE RECEIVED: 8/6/91

PROJECT NAME: #77082

**JOB SITE:** Richford, VT

ADDRESS:

DATE ANALYZED: 8/7/91

DATE REPORTED: 8/8/91

MATRIX:   X   SOIL           WATER           AIR           SOIL GAS

### Analysis #

Sample I.D.

# Of Peaks

Tentative I.D.

Conc.  
Relative  
to  
Benzene  
(ppb)

### Comments

6

SBA-1-01

3

Hydrocarbon Mix

Trace

7

**SBA-1-02**

2

Hydrocarbon Mix

Trace

8

**SBA-1-03**

N.D.

N.D.

CALIBRATION: BTEX

2

0.200



Samples analyzed by gas chromatography are quantitated by matching the retention times of sample peaks with those of known compounds. A matching retention time is not proof of chemical identity.

R.T. = Retention time relative to Benzene

Gas Chromatography: PHOTOVAC 10S50

Analytic Column: Isothermal Capillary CPSIL 5 CB

Detector: Photo Ionization

Carrier Gas: Ultra Zero Air at 12 cc/min

Injection Size: 500 ul

Gain: 20

Analyst: Kathleen W. Nolan

LABORATORY REPORT  
ANALYSIS FOR VOLATILE ORGANIC COMPOUNDS

CLIENT: US SBA DATE RECEIVED: 8/6/91  
PROJECT NAME: #77082  
JOB SITE: Richford, VT  
ADDRESS: \_\_\_\_\_ DATE ANALYZED: 8/7/91  
\_\_\_\_\_ DATE REPORTED: 8/8/91

BORING/WELL: SBA-2  
MATRIX: X SOIL \_\_\_\_\_ WATER \_\_\_\_\_ AIR \_\_\_\_\_ SOIL GAS \_\_\_\_\_

<u>Analysis #</u>	<u>Sample I.D.</u>	<u># Of Peaks</u>	<u>Tentative I.D.</u>	<u>Conc.</u> <u>Relative</u> <u>to</u> <u>Benzene</u> <u>(ppb)</u>	<u>Comments</u>
<u>10</u>	<u>SBA-2-01</u>	<u>4</u>	<u>Hydrocarbon Mix</u>	<u>Trace</u>	_____
<u>11</u>	<u>SBA-2-02</u>	<u>10</u>	<u>Hydrocarbon Mix</u>	<u>50-70</u>	_____
<u>12</u>	<u>SBA-2-03</u>	<u>14</u>	<u>Hydrocarbon Mix</u>	<u>1.6-2.0</u> <u>ppm</u>	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

CALIBRATION: BTEX at 0.200 ppm

Samples analyzed by gas chromatography are quantitated by matching the retention times of sample peaks with those of known compounds. A matching retention time is not proof of chemical identity.

R.T. = Retention time relative to Benzene  
Gas Chromatography: PHOTUVAC 10S50  
Analytic Column: Isothermal Capillary CPSIL 5 CB  
Detector: Photo Ionization

Carrier Gas: Ultra Zero Air at 12 cc/min  
Injection Size: 500 ul  
Gain: 20

Analyst: Kathleen W. Nolan

2  
LABORATORY REPORT  
ANALYSIS FOR VOLATILE ORGANIC COMPOUNDS

CLIENT: US SBA DATE RECEIVED: 8/6/91  
PROJECT NAME: #77082  
JOB SITE: Richford, VT DATE ANALYZED: 8/7/91  
ADDRESS: \_\_\_\_\_ DATE REPORTED: 8/8/91  
\_\_\_\_\_

BORING/WELL: SBA-3  
MATRIX: X SOIL \_\_\_\_\_ WATER \_\_\_\_\_ AIR \_\_\_\_\_ SOIL GAS \_\_\_\_\_

<u>Analysis #</u>	<u>Sample I.D.</u>	<u># Of Peaks</u>	<u>Tentative I.D.</u>	<u>Conc.</u> <u>Relative</u> <u>to</u> <u>Benzene</u> <u>(ppb)</u>	<u>Comments</u>
<u>13</u>	<u>SBA-3-01</u>	<u>8</u>	<u>Hydrocarbon Mix</u>	<u>95-125</u>	_____
<u>14</u>	<u>SBA-3-02</u>	<u>9</u>	<u>Hydrocarbon Mix</u>	<u>40-60</u>	_____
<u>15</u>	<u>SBA-3-03</u>	<u>3</u>	<u>Hydrocarbon Mix</u>	<u>10-20</u>	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

CALIBRATION: BTEX at 0.200 ppm

Samples analyzed by gas chromatography are quantitated by matching the retention times of sample peaks with those of known compounds. A matching retention time is not proof of chemical identity.

R.T. = Retention time relative to Benzene  
Gas Chromatography: PHOTOVAC 10S50  
Analytic Column: Isothermal Capillary CPSIL 5 CB  
Detector: Photo Ionization

Carrier Gas: Ultra Zero Air at 12 cc/min  
Injection Size: 500 ul  
Gain: 20

Analyst: Kathleen W. Nolan

X  
X  
LABORATORY REPORT  
ANALYSIS FOR VOLATILE ORGANIC COMPOUNDS

CLIENT: US SBA DATE RECEIVED: 8/6/91  
PROJECT NAME: #77082  
JOB SITE: Richford, VT  
ADDRESS: \_\_\_\_\_ DATE ANALYZED: 8/7/91  
\_\_\_\_\_ DATE REPORTED: 8/8/91

BORING/WELL: SBA-4  
MATRIX: X SOIL \_\_\_\_\_ WATER \_\_\_\_\_ AIR \_\_\_\_\_ SOIL GAS

<u>Analysis #</u>	<u>Sample I.D.</u>	<u># Of Peaks</u>	<u>Tentative I.D.</u>	<u>Conc. Relative to Benzene (ppb)</u>	<u>Comments</u>
<u>16</u>	<u>SBA-4-01</u>	<u>8</u>	<u>Hydrocarbon Mix</u>	<u>15-25</u>	_____
<u>17</u>	<u>SBA-4-02</u>	<u>7</u>	<u>Hydrocarbon Mix</u>	<u>10-20</u>	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

CALIBRATION: BTEX at 0.200 ppm

Samples analyzed by gas chromatography are quantitated by matching the retention times of sample peaks with those of known compounds. A matching retention time is not proof of chemical identity.

R.T. = Retention time relative to Benzene  
Gas Chromatography: PHOTOVAC 10S50  
Analytic Column: Isothermal Capillary CPSIL 5 CB  
Detector: Photo Ionization

Carrier Gas: Ultra Zero Air at 12 cc/min  
Injection Size: 500 ul  
Gain: 20

Analyst: Kathleen W. Nolan

LABORATORY REPORT  
ANALYSIS FOR VOLATILE ORGANIC COMPOUNDS

CLIENT: US SBA DATE RECEIVED: 8/6/91  
PROJECT NAME: #77082  
JOB SITE: Richford, VT  
ADDRESS: \_\_\_\_\_ DATE ANALYZED: 8/7/91  
\_\_\_\_\_ DATE REPORTED: 8/8/91  
\_\_\_\_\_

BORING/WELL: SBA-5  
MATRIX: X SOIL \_\_\_\_\_ WATER \_\_\_\_\_ AIR \_\_\_\_\_ SOIL GAS \_\_\_\_\_

<u>Analysis #</u>	<u>Sample I.D.</u>	<u># Of Peaks</u>	<u>Tentative I.D.</u>	<u>Conc.</u> <u>Relative</u> <u>to</u> <u>Benzene</u> <u>(ppb)</u>	<u>Comments</u>
<u>18</u>	<u>SBA-5-01</u>	<u>3</u>	<u>Hydrocarbon Mix</u>	<u>5-10</u>	
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

CALIBRATION: BTEX at 0.200 ppm

Samples analyzed by gas chromatography are quantitated by matching the retention times of sample peaks with those of known compounds. A matching retention time is not proof of chemical identity.

R.T. = Retention time relative to Benzene  
Gas Chromatography: PHOTOVAC 10S50  
Analytic Column: Isothermal Capillary CPSIL 5 CB  
Detector: Photo Ionization

Carrier Gas: Ultra Zero Air at 12 cc/min  
Injection Size: 500 ul  
Gain: 20

Analyst: Kathleen W. Nolan

LABORATORY REPORT  
ANALYSIS FOR VOLATILE ORGANIC COMPOUNDS

CLIENT: US SBA DATE RECEIVED: 8/6/91  
PROJECT NAME: #77082  
JOB SITE: Richford, VT  
ADDRESS: \_\_\_\_\_ DATE ANALYZED: 8/7/91  
\_\_\_\_\_ DATE REPORTED: 8/8/91

BORING/WELL: SBA-6  
MATRIX: X SOIL \_\_\_\_\_ WATER \_\_\_\_\_ AIR \_\_\_\_\_ SOIL GAS

<u>Analysis #</u>	<u>Sample I.D.</u>	<u># Of Peaks</u>	<u>Tentative I.D.</u>	<u>Conc.</u> <u>Relative</u> <u>to</u> <u>Benzene</u> <u>(ppb)</u>	<u>Comments</u>
<u>19</u>	<u>SBA-6-01</u>	<u>4</u>	<u>Hydrocarbon Mix</u>	<u>5-15</u>	
<u>20</u>	<u>SBA-6-02</u>	<u>1</u>	<u>Hydrocarbon Mix</u>	<u>Trace</u>	
<u>21</u>	<u>SBA-6-03</u>	<u>N.D.</u>			
<u>22</u>	<u>SBA-6-04</u>	<u>N.D.</u>			

CALIBRATION: BTEX at 0.200 ppm

Samples analyzed by gas chromatography are quantitated by matching the retention times of sample peaks with those of known compounds. A matching retention time is not proof of chemical identity.

R.T. = Retention time relative to Benzene

Gas Chromatography: PHOTOVAC 10S50

Analytic Column: Isothermal Capillary CPSIL 5 CB

Detector: Photo Ionization

Carrier Gas: Ultra Zero Air at 12 cc/min

Injection Size: 500 ul

Gain: 20

Analyst: Kathleen W. Nolan



8  
LABORATORY REPORT  
ANALYSIS FOR VOLATILE ORGANIC COMPOUNDS

CLIENT: US SBA DATE RECEIVED: 8/6/91  
PROJECT NAME: #77082  
JOB SITE: Richford, VT  
ADDRESS: \_\_\_\_\_ DATE ANALYZED: 8/7/91  
\_\_\_\_\_ DATE REPORTED: 8/8/91

BORING/WELL: UST - Qualitative

MATRIX: SOIL WATER AIR SOIL GAS

<u>Analysis #</u>	<u>Sample I.D.</u>	<u># Of Peaks</u>	<u>Tentative I.D.</u>	<u>Conc.</u> <u>Relative</u> <u>to</u> <u>Benzene</u> <u>(ppb)</u>	<u>Comments</u>
<u>24</u>	<u>UST-01</u>	<u>18</u>	<u>*</u>		<u>* This is a complex mixture with</u>
					<u>a more complex chromatographic</u>
					<u>pattern than leaded gasoline</u>
					<u>and more volatile components</u>
					<u>than fuel oil. This sample</u>
					<u>appears to include a mixture of</u>
					<u>4-8 carbon hydrocarbons with</u>
					<u>other additional components.</u>

CALIBRATION: BTEX at 0.200 ppm

Samples analyzed by gas chromatography are quantitated by matching the retention times of sample peaks with those of known compounds. A matching retention time is not proof of chemical identity.

R.T. = Retention time relative to Benzene  
Gas Chromatography: PHOTOVAC 10S50  
Analytic Column: Isothermal Capillary CPSIL 5 CB  
Detector: Photo Ionization

Carrier Gas: Ultra Zero Air at 12 cc/min  
Injection Size: 25 ul  
Gain: 20

Analyst: Kathleen W. Nolan

## APPENDIX E



September 04, 1991

Page 1 of 7

Gary Urich  
Contest Environmental  
Ref: U.S. SBA Richford

Invoice #77082  
Date Sampled: 08/21/91  
Date Received: 08/22/91  
Date Extracted: 08/23/91  
Date Analyzed: 08/27/91

Sample Matrix: Water

The results of analyses requested are listed below:

<u>Lab #</u> <u>Sample #</u>	<u>LOD</u>	<u>Total Petroleum Hydrocarbons</u> <u>mg/l</u>
91B07601 (MW-1)	0.2	ND
91B07602 (MW-2)	0.2	9.0
91B07603 (MW-3)	0.2	3.7
91B07604 (MW-6)	0.2	ND

Analytical Method(s): TPH by Infra Red, EPA 418.1

LOD = Limit of Detection

ND = Not Detected

Page 2 of 7

Contest Environmental

Ref: U.S. SBA Richford

Invoice #77082

Date Sampled: 08/21/91

Date Received: 08/22/91

Date Analyzed: 08/27/91

Sample Matrix: Water

The results of analyses requested are listed below:

## MICROGRAMS/LITER

<u>Lab #</u>		91B07601	91B07603
<u>Sample #</u>	<u>LOD</u>	<u>(MW-1)</u>	<u>(MW-3)</u>
Chloromethane	4	ND	ND
Bromomethane	7	ND	ND
Dichlorodifluoromethane	7	ND	ND
Vinyl Chloride	8	ND	ND
Chloroethane	6	ND	ND
Ethanol	150	ND	ND
Iodomethane	5	ND	ND
Methylene Chloride	3	ND	ND
Acrolein	197	ND	ND
Acetone	400	ND	ND
Acrylonitrile	6	ND	ND
Carbon Disulfide	3	ND	ND
Trichlorofluoromethane	6	ND	ND
1,1-Dichloroethylene	6	ND	ND
1,1-Dichloroethane	5	ND	ND
Trans 1,2-Dichloroethylene	7	ND	ND
Chloroform	7	ND	ND
2-Butanone (MEK)	31	ND	ND
1,2-Dichloroethane	5	ND	ND
Dibromomethane	3	ND	ND
1,1,1-Trichloroethane	8	ND	ND
Carbon Tetrachloride	7	ND	ND
Vinyl Acetate	21	ND	ND
Bromodichloromethane	2	ND	ND
1,2-Dichloropropane	3	ND	ND
cis 1,3-Dichloropropene	3	ND	ND
Trichloroethylene	4	ND	ND
Benzene	1	ND	ND
Chlorodibromomethane	3	ND	ND



Page 3 of 7

Contest Environmental

Ref: U.S. SBA Richford

Invoice #77082

Date Sampled: 08/21/91

Date Received: 08/22/91

Date Analyzed: 08/27/91

Sample Matrix: Water

The results of analyses requested are listed below:

MICROGRAMS/LITER			
Lab #		91B07601	91B07603
Sample #	LOD	(MW-1)	(MW-3)
Trans 1,3-Dichloropropene	3	ND	ND
1,1,2-Trichloroethane	3	ND	ND
2-Chloroethylvinylether	2	ND	ND
Bromoform	2	ND	ND
4-Methyl-2-Pentanone (MIBK)	28	ND	ND
2-Hexanone	24	ND	ND
1,2,3-Trichloropropane	1	ND	ND
Tetrachloroethylene	4	ND	ND
1,1,2,2-Tetrachloroethane	2	ND	ND
Trans 1,3-Dichloro-2-Butene	2	ND	ND
Ethyl Methacrylate	3	ND	ND
Toluene	2	ND	ND
Chlorobenzene	2	ND	ND
Ethylbenzene	1	ND	ND
Styrene	3	ND	ND
Xylenes	4	ND	ND
Cis 1,4-Dichloro-2-Butene	5	ND	ND

LOD = Limit of Detection

ND = Not Detected

Analytical Method(s): GC/MS, EPA 8240

Page 4 of 7

Contest Environmental

Ref: U.S. SBA Richford

Invoice #77082

Date Sampled: 08/21/91

Date Received: 08/22/91

Date Analyzed: 08/27/91

Sample Matrix: Water

The results of analyses requested are listed below:

## MICROGRAMS/LITER

<u>Lab #</u>		91B07604
<u>Sample #</u>	<u>LOD</u>	<u>(MW-6)</u>
Chloromethane	4	ND
Bromomethane	7	ND
Dichlorodifluoromethane	7	ND
Vinyl Chloride	8	ND
Chloroethane	6	ND
Ethanol	150	ND
Iodomethane	5	ND
Methylene Chloride	3	ND
Acrolein	197	ND
Acetone	400	ND
Acrylonitrile	6	ND
Carbon Disulfide	3	ND
Trichlorofluoromethane	6	ND
1,1-Dichloroethylene	6	ND
1,1-Dichloroethane	5	ND
Trans 1,2-Dichloroethylene	7	ND
Chloroform	7	ND
2-Butanone (MEK)	31	ND
1,2-Dichloroethane	5	ND
Dibromomethane	3	ND
1,1,1-Trichloroethane	8	ND
Carbon Tetrachloride	7	ND
Vinyl Acetate	21	ND
Bromodichloromethane	2	ND
1,2-Dichloropropane	3	ND
cis 1,3-Dichloropropene	3	ND
Trichloroethylene	4	ND
Benzene	1	ND
Chlorodibromomethane	3	ND



Page 5 of 7

Contest Environmental

Ref: U.S. SBA Richford

Invoice #77082

Date Sampled: 08/21/91

Date Received: 08/22/91

Date Analyzed: 08/27/91

Sample Matrix: Water

The results of analyses requested are listed below:

## MICROGRAMS/LITER

<u>Lab #</u>		91B07604
<u>Sample #</u>	<u>LOD</u>	<u>(MW-6)</u>
Trans 1,3-Dichloropropene	3	ND
1,1,2-Trichloroethane	3	ND
2-Chloroethylvinylether	2	ND
Bromoform	2	ND
4-Methyl-2-Pentanone (MIBK)	28	ND
2-Hexanone	24	ND
1,2,3-Trichloropropane	1	ND
Tetrachloroethylene	4	ND
1,1,2,2-Tetrachloroethane	2	ND
Trans 1,3-Dichloro-2-Butene	2	ND
Ethyl Methacrylate	3	ND
Toluene	2	ND
Chlorobenzene	2	ND
Ethylbenzene	1	ND
Styrene	3	ND
Xylenes	4	ND
Cis 1,4-Dichloro-2-Butene	5	ND

LOD = Limit of Detection

ND = Not Detected

Analytical Method(s): GC/MS, EPA 8240



Page 6 of 7

Contest Environmental

Ref: U.S. SBA Richford

Invoice #77082

Date Sampled: 08/21/91

Date Received: 08/22/91

Date Analyzed: 08/27/91

Sample Matrix: Water

The results of analyses requested are listed below:

## MICROGRAMS/LITER

<u>Lab #</u>		91B07602
<u>Sample #</u>	<u>LOD</u>	<u>(MW-2)</u>
Chloromethane	40	ND
Bromomethane	70	ND
Dichlorodifluoromethane	70	ND
Vinyl Chloride	80	ND
Chloroethane	60	ND
Ethanol	1500	ND
Iodomethane	50	ND
Methylene Chloride	30	ND
Acrolein	1970	ND
Acetone	4000	ND
Acrylonitrile	60	ND
Carbon Disulfide	30	ND
Trichlorofluoromethane	60	ND
1,1-Dichloroethylene	60	ND
1,1-Dichloroethane	50	ND
Trans 1,2-Dichloroethylene	70	ND
Chloroform	70	ND
2-Butanone (MEK)	310	ND
1,2-Dichloroethane	50	ND
Dibromomethane	30	ND
1,1,1-Trichloroethane	80	ND
Carbon Tetrachloride	70	ND
Vinyl Acetate	210	ND
Bromodichloromethane	20	ND
1,2-Dichloropropane	30	ND
cis 1,3-Dichloropropene	30	ND
Trichloroethylene	40	ND
Benzene	10	ND
Chlorodibromomethane	30	ND





Page 7 of 7

Contest Environmental

Ref: U.S. SBA Richford

Invoice #77082

Date Sampled: 08/21/91

Date Received: 08/22/91

Date Analyzed: 08/27/91

Sample Matrix: Water

The results of analyses requested are listed below:

## MICROGRAMS/LITER

<u>Lab #</u>		91B07602
<u>Sample #</u>	<u>LOD</u>	<u>(MW-2)</u>
Trans 1,3-Dichloropropene	30	ND
1,1,2-Trichloroethane	30	ND
2-Chloroethylvinylether	20	ND
Bromoform	20	ND
4-Methyl-2-Pentanone (MIBK)	280	ND
2-Hexanone	240	ND
1,2,3-Trichloropropane	10	ND
Tetrachloroethylene	40	ND
1,1,2,2-Tetrachloroethane	20	ND
Trans 1,3-Dichloro-2-Butene	20	ND
Ethyl Methacrylate	30	ND
Toluene	20	ND
Chlorobenzene	20	ND
Ethylbenzene	10	320
Styrene	30	ND
Xylenes	40	890
Cis 1,4-Dichloro-2-Butene	50	ND

LOD = Limit of Detection

ND = Not Detected

Analytical Method(s): GC/MS, EPA 8240

Sincerely,

CON-TEST, Inc.

Edward Denson  
Laboratory Director

CORPUS, INC.  
39 SPRUCE STREET  
P.O. BOX 591  
EAST LONGMEADOW ME 01028  
(413)-575-1198

DATA FILE : >07601:=A5  
OPERATOR : AUG SUPER GRP  
SAMPLE INJECTED TIME : 8/28/91 17:42  
CLIENT SAMPLE INFORMATION : 9180/601; MW-1  
U.S. SEA RICHFORD

-----  
EPA 624/8240 SURROGATE % RECOVERY REPORT  
-----

SURROGATE COMPOUND	LABORATORY DETERMINED CONTROL LIMITS (% RECOVERY)
-----	-----
d4-1,2-DICHLOROETHANE (SUR #1)	56 - 128
d-8 TOLUENE (SUR #2)	65 - 115
BROMOFLUOROBENZENE (SUR #3)	62 - 137

SURROGATE COMPOUND	EXPECTED CONCENTRATION (PPB)	ANALYZED CONCENTRATION (PPB)	ANALYZED % RECOVERY
-----	-----	-----	-----
d4-1,2-DICHLOROETHANE	25.000	26.941	108
d-8 TOLUENE	25.000	23.076	92
BROMOFLUOROBENZENE	25.000	25.102	100

COMMENTS:

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COM-TEST, INC.  
39 SPRUCE STREET  
P.O. BOX 591  
EAST LONGMEADOW MA 01026  
(413)-525-1198

DATA FILE : >07602\*:A3  
OPERATOR : AUG SUPER GRP  
SAMPLE INJECTED TIME : 8/28/91 18:35  
CLIENT SAMPLE INFORMATION : 91807602; MW-2 1:10  
U.S. SBA RICHFORD

-----  
EPA 624/8240 SURROGATE % RECOVERY REPORT  
-----

SURROGATE COMPOUND	LABORATORY DETERMINED CONTROL LIMITS (% RECOVERY)
d4-1,2-DICHLOROETHANE (SUR #1)	56 - 128
d-8 TOLUENE (SUR #2)	65 - 113
BROMOFLUOROBENZENE (SUR #3)	62 - 137

SURROGATE COMPOUND	EXPECTED CONCENTRATION (PPB)	ANALYZED CONCENTRATION (PPB)	ANALYZED % RECOVERY
d4-1,2-DICHLOROETHANE	25.000	26.467	106
d-8 TOLUENE	25.000	23.286	93
BROMOFLUOROBENZENE	25.000	24.139	97

COMMENTS:

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CON-TEST, INC.  
39 SPRUCE STREET  
P.O. BOX 591  
LAST LONGMEADOW MA 01028  
(415)-575-1178

DATA FILE : >07603: #43  
OPERATOR : AUG SUPER GRP  
SAMPLE INJECTED TIME : 8/28/91 19:28  
CLIENT SAMPLE INFORMATION : 91B07603; MW-3  
O.S. SBA RICHFORD

-----  
EPA 624/8240 SURROGATE % RECOVERY REPORT  
-----

SURROGATE COMPOUND	LABORATORY DETERMINED CONTROL LIMITS (% RECOVERY)
-----	-----
d4-1,2-DICHLOROETHANE (SUR #1)	56 - 128
d-8 TOLUENE (SUR #2)	65 - 115
BROMOFLUOROBENZENE (SUR #3)	62 - 137

SURROGATE COMPOUND	EXPECTED CONCENTRATION (PPB)	ANALYZED CONCENTRATION (PPB)	ANALYZED % RECOVERY
-----	-----	-----	-----
d4-1,2-DICHLOROETHANE	25.000	26.614	106
d-8 TOLUENE	25.000	22.496	90
BROMOFLUOROBENZENE	25.000	25.592	102

COMMENTS:

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CON-TEST, INC.  
39 SPRUCE STREET  
P.O. BOX 591  
EAST LONGMEADOW MA 01028  
(413)-525-1198

DATA FILE : >07604::A3  
OPERATOR : AUG SUPER GRP  
SAMPLE INJECTED TIME : 8/28/91 20:19  
CLIENT SAMPLE INFORMATION : 91B07604; MW-6  
U.S. SBA RICHFORD

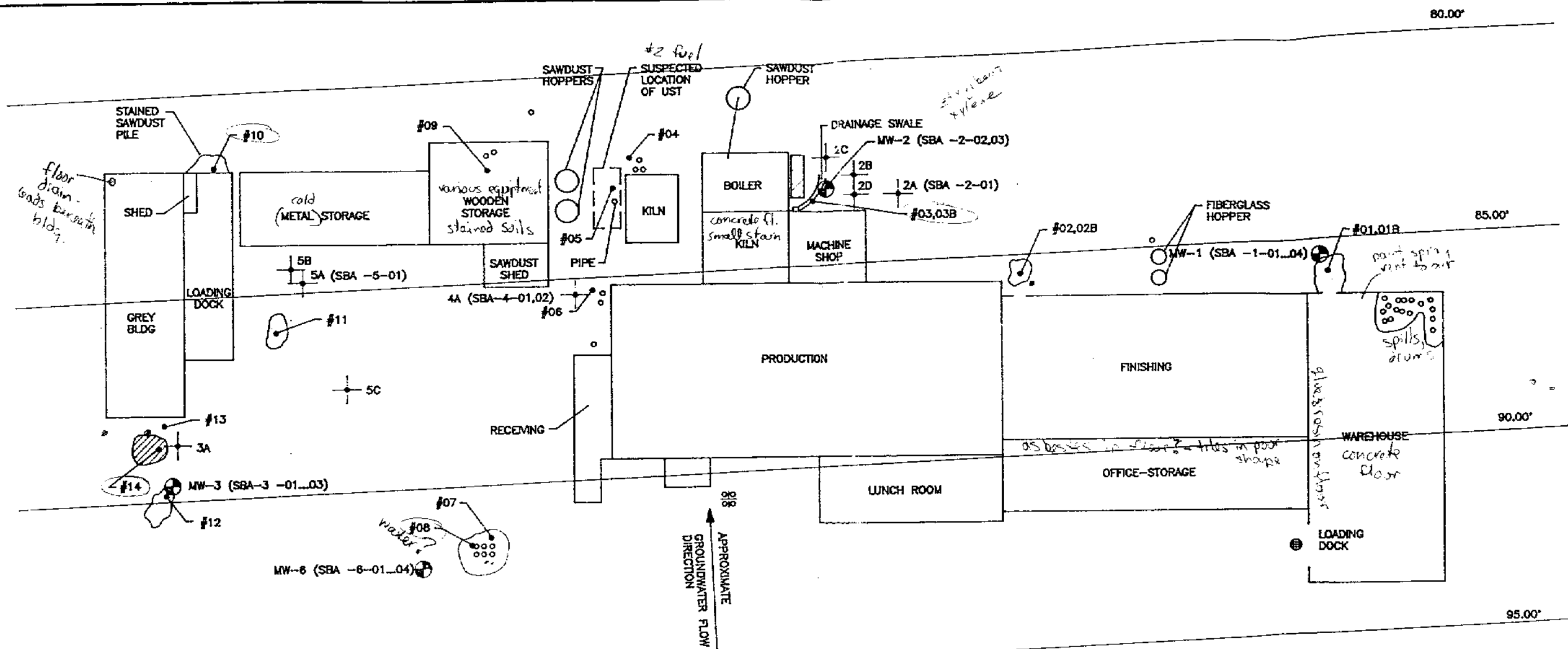
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EPA 624/8240 SURROGATE % RECOVERY REPORT  
-----

SURROGATE COMPOUND	LABORATORY DETERMINED CONTROL LIMITS (% RECOVERY)
d4-1,2-DICHLOROETHANE (SUR #1)	56 - 128
d-8 TOLUENE (SUR #2)	65 - 113
BROMOFLUOROBENZENE (SUR #3)	62 - 137

SURROGATE COMPOUND	EXPECTED CONCENTRATION (PPB)	ANALYZED CONCENTRATION (PPB)	ANALYZED % RECOVERY
d4-1,2-DICHLOROETHANE	25.000	26.427	106
d-8 TOLUENE	25.000	23.312	93
BROMOFLUOROBENZENE	25.000	24.083	96

COMMENTS:

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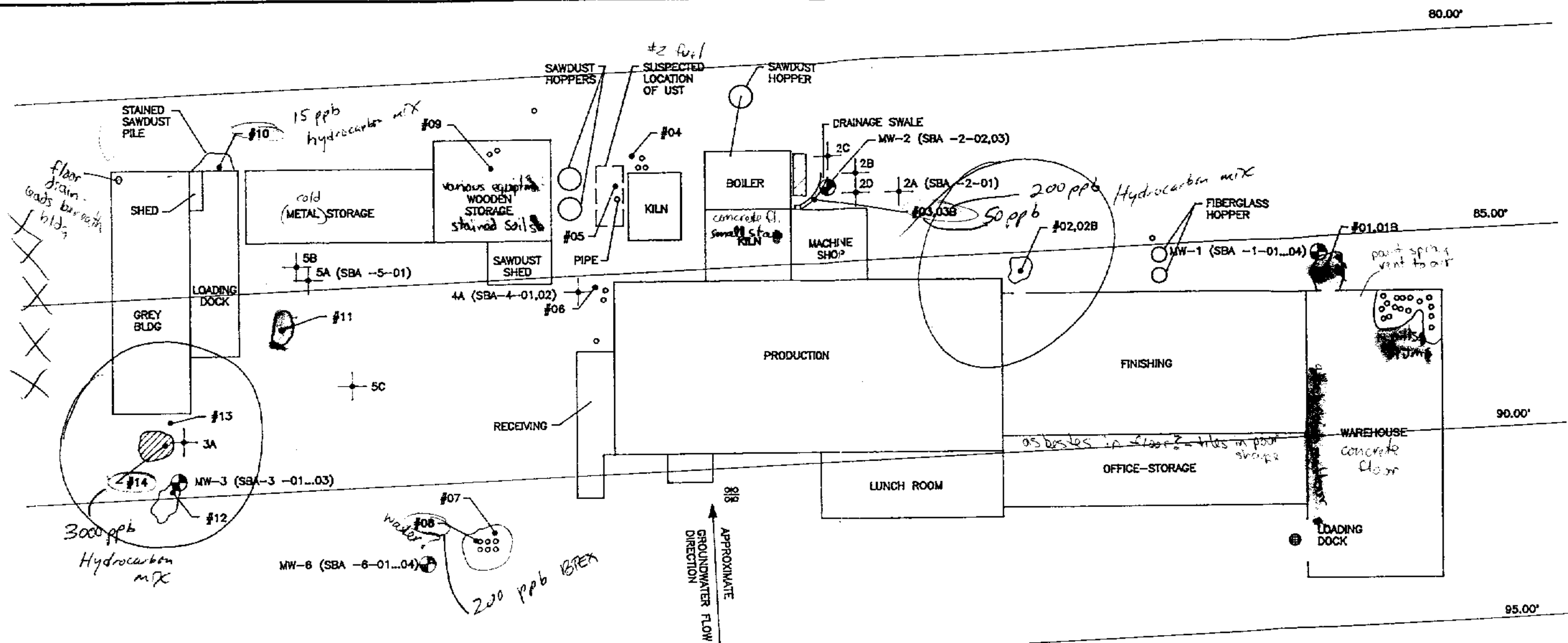


KEY	
	GROUNDWATER CONTOUR
	SEWER GRATE
	SOIL PILE
	STAINED SOIL
	DRUM STORAGE AREA
	DRUM(S) LOCATION
	UTILITY POLE WITH TRANSFORMERS
	FUEL TANK ABOVE GROUND
	SAMPLE LOCATION
	ABANDONED SOIL BORING
	MONITORING WELL

NORTHLAND SPORTS  
RICHFORD, VT.  
FACILITY SITE PLAN

FIGURE 3

CON-TEST INC.	
39 SPRUCE - P.O. BOX 591 EAST LONGMEADOW, MA 01028	
DRAWN BY: J.A.D.	
DATE: 5/91 REVISED-	
APPROVED BY:	
SITE PLAN	
SCALE: N.T.S.	DWG. NO. E77072P2



VOC's in Soil

Spills, stained soil

KEY	
	GROUNDWATER CONTOUR
	SEWER GRATE
	SOIL PILE
	STAINED SOIL
	DRUM STORAGE AREA
	DRUM(S) LOCATION
	UTILITY POLE WITH TRANSFORMERS
	FUEL TANK ABOVE GROUND
	SAMPLE LOCATION
	ABANDONED SOIL BORING
	MONITORING WELL

# NORTHLAND SPORTS RICHFORD, VT. FACILITY SITE PLAN

FIGURE 3

CON-TEST INC.	
39 SPRUCE - P.O. BOX 591 EAST LONGMEADOW, MA 01028	
DRAWN BY: J.A.D.	
DATE: 5/91 REVISED-	
APPROVED BY:	
SITE PLAN	
SCALE: N.T.S.	DWG. NO. E77072P2